Wyoming Content Standard 1. Number Operations and Concepts		
Skill 1. Understand the meaning of arithmetic operations and make reasonable estimates.		
Benchmark	**Where in CCSS**	**Content Limits:**
04.1.8 Students use estimation strategies to solve problems.	**N1 is embedded in N2 and N3.**	

Wyoming Content Standard 1. Number Operations and Concepts		
Skill 2. Understand ways to represent numbers, relationships among numbers, and number systems.		
Benchmark	**Where in CCSS**	**Content Limits:**
04.1.1 Students use the concept of place value to read and write whole numbers up to 999,999 in words, standard, and expanded form.	**4.NBT.2** (Read and write multi-digit whole numbers using base-ten . . .)	• Represent, compare, and order whole numbers up to 999,999 Items may compare and order whole numbers greater than zero. • Numbers in the stimulus should not be presented in numerical order. • Items may compare smaller or larger numbers presented in the same format. • Words, number lines, drawings, numerals, or symbols (<,>, =) may be used.

04.1.2
Students compare and order whole numbers.
	4.NBT.2 (. . . Compare two multi-digit numbers based on meanings of the digits . . .)
	4.NF.6 (Use decimal notation for fractions with denominators 10 or 100)
		• In items comparing fractions with decimals:
		  ○ The denominator of the fraction should represent the same number of places as the decimal.
		  ○ For example, 0.25 = 25/100 and 0.5 = 5/10
		  ○ Leading zeros should be used.

04.1.7 Students recognize commonly used fractions (halves, thirds, fourths) as parts of a whole using an area model.	**4.NF.1** (Explain why a fraction a/b is equivalent to a fraction (n x a)/(n x b) by using visual fraction models . . .)	• The place values of the fractional part of decimal numbers should range from tenths through hundredths. • Items are limited to using common fractions (halves, thirds, and fourths). • Numbers being compared may be in the same form or in two different forms (word, standard and expanded or whole number, fraction or decimal). • Items will not include repeating decimals. • Some items should include word names as well as numerals. • Items may present fractions and/or decimals in a variety of models (area models, set models, grids, or counting charts). • Items should be set in either a real-world or mathematical context. • CR items may have students "Show your work or explain your answer." • Graphics should be used in some of these items, as appropriate.

Wyoming Content Standard 1. Number Operations and Concepts		
Skill 3. Develop the connection between conceptual understanding and computational proficiency.		
Benchmark	**Where in CCSS**	**Content Limits:**
04.1.3 Students use coins and bills to compare the values, make combinations up to $10.00, and make change from amounts up to $5.00.	**2.MD.8** (Solve word problems with dollar bills and coins using $ and ¢ appropriately)	• Items should include multiplication by single digits; adding and subtracting to thousands, multiplying hundreds by a single digit, addition and subtraction of decimals (tenths through hundredths) in the context of money making combinations up to $10, and making change up to $5.
04.1.4 Students demonstrate computational fluency with basic facts (add to 20, subtract from 20, multiply by 0-10).	**2.OA. 2** (Facts to 20 with fluency, using mental strategies.) **3.OA.7** (Fluently multiply and divide within 100…) **5.NBT.7:** (Add, subtract … decimals to hundredths)	• Items will be limited to no more than two operation problems. • Items will not include whole numbers with more than four digits and/or decimals greater than hundredths. • Items should not involve division. • Items may use drawings, symbols, algorithms, number sentences, or real-world problem situations. • Graphics should be used in some of these items, as appropriate. • Items involving estimation should be limited to use of whole numbers.
04.1.5 Students add and subtract to thousands and multiply hundreds by a single digit.	**3.NBT.2** (Fluently add and subtract within 1000 …) **4.NBT.5** **4.NF.6** (Use decimal notation for fractions with denominators 10 or 100)	• Students may be required to use any of the following estimation strategies: clustering, reasonableness, front-end, compatible numbers, grouping, etc. • CR items may have students "Show your work or explain your answer." • Rounding of whole numbers will be limited to the nearest tens or hundreds place. **[4.NBT.3]**
04.1.6 Students explain their choice of problem-solving strategies and justify their results when performing whole number operations in problem-solving situations.	**4.OA.3** (Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations . . .) **Core Practice #6**	
04.1.8 Students use estimation strategies to solve problems.	**4.OA.3** (. . . Assess the reasonableness of answers using mental computation and estimation strategies including rounding.)	

Wyoming Content Standard 2. Geometry		
Skill 1. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.		
Benchmark	**Where in CCSS**	**Content Limits:**
04.2.3 Students select, use, and communicate organizational methods in problem-solving situations appropriate to grade level.	**Core Practice #6**	• Items will assess identifying parallel, perpendicular, and intersecting lines. • Items will be presented either on a grid, using only quadrant 1, or in picture form. • Items may assess understanding and application of perpendicularity and parallelism. • Items should assess only geometric concepts of two-dimensional figures. • Items should be set in a real-world context. • CR items may have students "Show your work or explain your answer." • Graphics should be used in most of these items, as appropriate.
04.2.4 Students know characteristics of lines (parallel, perpendicular, and intersecting).	**4.G.1** (Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. . . .)	

Wyoming Content Standard 2. Geometry

Skill 2. Analyze characteristics and properties of two- and three-dimensional geometric shapes.

Benchmark	Where in CCSS	Content Limits:
04.2.1 Students classify and describe 2- and 3- dimensional geometric objects by their attributes (sides, edges, vertices, and faces).	**3.G.1** (2-D) **6.G.4** Represent three-dimensional figures using nets. . .	• Items will assess identifying basic properties and attributes of geometric solids and regular polygons up to 8 sides: such as, vertices, edges and faces and sides and diagonals of polygons. • Items assessing three-dimensional figures will use right prisms or right circular cylinders.
04.2.3 Students select, use, and communicate organizational methods in problem-solving situations appropriate to grade level.	**5.G.4** (use hierarchy of properties) **Core Practice #6**	• Items assessing three-dimensional figures will use various types of drawings and perspectives (e.g., flat patterns/nets, isometric drawings). • Items should be set in either a real-world or mathematical context. • CR items may have students "Show your work or explain your answer." • Graphics should be used in all of these items. • Items will require students to use spatial reasoning and geometric modeling to classify and describe

Wyoming Content Standard 2. Geometry

Skill 3. Apply transformations and use symmetry to analyze mathematical situations.

Benchmark	Where in CCSS	Content Limits:
04.2.2 Students understand the images resulting from reflections (flips).	**8.G.1** (Reflections)	• Items may assess properties and relationships pertaining to regular two-dimensional shapes. • Items will assess reflections (flips) and their results on a geometric figure or on a real-world item shaped similarly to a geometric figure.
04.2.3 Students select, use, and communicate organizational methods in problem-solving situations appropriate to grade level.	**4.G.3** (Recognize a line of symmetry for a two-dimensional figure as a line . . .) **Core Practice #6**	• Polygons may be regular or irregular polygons with up to 8 sides. • Regular polygons must be presented with distinct markings so that reflections can be clearly distinguished/identified. • Items may be set in either a real-world or mathematical context. • CR items may have students "Show your work or explain your answer." • Graphics should be used in all of these items.

Wyoming Content Standard 3. Measurement		
Skill 1. Understand measurable attributes of objects and the units, systems, and processes of measurement.		
Benchmark	**Where in CCSS**	**Content Limits:**

04.3.1 Students select and apply appropriate U.S. customary units (half inch, quarter inch, feet, and yards) to the estimation and measurement of length in real-world problems using actual measuring devices.	**2.MD.1** (Measure length using appropriate tools) **2.MD.3** (Estimate lengths with inches, feet, centimeters and meters) **3.MD.4** (Measure to ½ and ¼ inch)	• Items will assess measurements of length, weight/mass, capacity, temperature, and time (including years).
		 • All units must be within the customary system of measurement.
		 • Items will use the following measurement units:
		   o length (quarter-inch, half-inch, inch, foot, yard)
		   o weight/mass (ounce, pound)
		   o capacity (teaspoons, tablespoons, cup, pint, quart, gallon ; ounce conversions with a conversion chart)
		   o time (seconds, hours, minutes)
		 • Items may require students to solve real-world problems, including distance, using a scale drawing.
		 • Items may assess comparison of length, or weight/mass, or capacity, or time.
		 • Conversions should be limited to one-step conversions.
		 • Items should not assess vocabulary (i.e. definitions of terms)
		 • Items should be set in a real-world context.
		 • CR items may have students "Show your work or explain your answer."
		 • Graphics should be used in most of these items, as appropriate.
		 • Item may require students to determine elapsed time (nearest minute)

04.3.2 Students select and apply appropriate U.S. customary units (ounces and pounds) to the estimation and measurement of weight in real-world problems using actual measuring devices.		
04.3.3 Students select and apply appropriate U.S. customary units (teaspoons, tablespoons, cups, pints, quarts, and gallons) to the estimation and measurement of capacity in real-world problems using actual measuring devices.		
04.3.4 Students demonstrate relationships within the U.S. customary system, given an equivalence chart, in problem-solving situations.	**4.MD.1** (Know relative sizes of measurement units within one system of units . . .) **4.MD.2** (Use the four operations to solve word problems . . . including. . . problems that require expressing measurements given in a larger unit in terms of a smaller unit.. . .)	
04.3.6 Students use time, in problem-solving situations to: • compare relationships among	**4.MD.1** (. . . units including km, m, cm; kg, g, lb, oz.; l, ml; hr, min, sec. Within a single system of	

| seconds, minutes, and hours;
 • use elapsed time to the nearest minute. | measurement, express measurements in a larger unit in terms of a smaller unit. . .)
 4.MD.2 (See above) | |

Wyoming Content Standard 3. Measurement		
Skill 2. Apply appropriate techniques, tools, and formulas to determine perimeter, area or volume.		
Benchmark	**Where in CCSS**	**Content Limits:**
04.3.5 Students determine area and perimeter of rectangles and squares using models in problem-solving situations.	**4.MD.3** (Apply the area and perimeter formulas for rectangles in real world . . .)	• Items may assess perimeter or area using rectangles or squares. • Items should use geometric properties and formulas for two-dimensional shapes only; three-dimensional shapes will not be assessed under this context. • Only simple formulas should be used. • Graphic models will be used to assess perimeter and area. • The number of two-dimensional figures assessed in an item cannot exceed two. • Dimensions included in items should be numbers appropriate for this grade level. • Items may include standard units of measurement in inches, feet, yards, or miles. • Graphics should be used in most of these items, as appropriate. • CR items may have students "Show your work or explain your answer." • Items should be set in a real-world context.

Wyoming Content Standard 4. Algebra		
Skill 1. Understand patterns, relations, and functions.		
Benchmark	**Where in CCSS**	**Content Limits:**
04.4.1 Students recognize, describe, extend, create, and generalize patterns by using manipulatives, numbers, and graphic representations.	**4.OA.5** (Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. . . .)	• Operations in patterns such as function tables will be limited to addition, subtraction, or multiplication. • Patterns should be limited to one operation however; patterns may contain 2 operations if those operations are explicitly stated in the problem. • Students should not be asked to extend the pattern more than four steps beyond what is given or to provide more than two missing elements within a pattern.
04.4.2 Students apply knowledge of appropriate grade level patterns when solving problems.	**4.OA.5** (See above)	• Students may be asked to identify a pattern rule in multiple-choice items or explain a pattern rule in CR items. • The pattern given should be shown with at least two examples of the pattern repeated, unless it is clearly explained in the stem of the item.
04.4.3 Students explain a rule given a pattern or sequence.	**4.OA.5** (See above)	• A repeating pattern set should contain no more than 7 elements. • Items may be set in either a real-world or mathematical context. • CR items may have students "Show your work or explain your answer." • Graphics should be used in most of these items, as appropriate.

Wyoming Content Standard 4. Algebra		
Skill 2. Use mathematical models to represent and understand quantitative relationships.		
Benchmark	**Where in CCSS**	**Content Limits:**
No Benchmarks for this Skill		Not Assessed at this Grade ----

Wyoming Content Standard 5. Data Analysis and Probability		
Skill 1. Collect, organize, and display relevant data to answer questions and use appropriate statistical methods to analyze the data.		
Benchmark	**Where in CCSS**	**Content Limits:**

04.5.1
Students collect, organize, and compare data in graphs, Venn diagrams, tables, and charts.
	2.MD.9 (Line Plot)
	2.MD.10 (Picture graph, bar graph)
	3.MD.3 (Scaled picture graph, scaled bar graph)
	3.MD.4 (Line Plot)
	4.MD.4 (Line plot, using fractions of a unit)
		• The data presented in graphs should represent no more than 5 categories.
		• Items will use sets of numerical data presented in a list, picture, table, chart, Venn diagram or graph.
		• Items will assess:
		   o identifying different parts of a correct graph;
		   o interpreting and comparing information from tables, charts, pictographs, single-bar and double-bar graphs, and single-line graphs;
		   o recognizing appropriate displays for different kinds of data;

04.5.2 Students communicate conclusions about a set of data by interpreting information using graphs, Venn diagrams, tables, and charts.	**2.MD.10** (Picture graph, bar graph) **3.MD.3** (Scaled picture graph, scaled bar graph) **4.MD.4** (Line plot, using fractions of a unit) **Core Practice #6**	o recognizing appropriate scale increments; and o recognizing reasonable conclusions. • Graphs presented for students to interpret should contain all elements of a correct graph. • Scale increments are limited to units of 1, 2, or 4, 5, 10, 20, 25, 50 or 100. • Graphics should be used in all of these items. • CR items may have students "Show your work or explain your answer." • Items should be set in a real-world context.

Wyoming Content Standard 5. Data Analysis and Probability		
Skill 2. Develop and evaluate inferences and predictions that are based on data.		
Benchmark	**Where in CCSS**	**Content Limits:**
04.5.3 Students predict, perform, and record results of probability experiments. **04.5.4** Students predict all possible outcomes of a given situation or event.	**7.SP.5** (Understand probability expresses the likelihood of an event occurring and is expresses as a number between 0 and 1) **7.SP. 6** (Predict relative frequency of various probabilities) **7.SP.7** (Develop a probability model and use it to find probabilities of events) **7.SP.8** (Find probabilities of compound events)	• In items involving the determination and/or listing of all possible outcomes, the number of outcomes should not exceed 9. • Mathematical expectations of probabilities will be assessed using simple empirical data. • Most items developed for this context should assess simple events. • Probabilities should be based on whole numbers. • Items will assess the likelihood or probability of an outcome occurring. • Probabilities may be expressed as certain, likely, unlikely, and impossible. • Items may include numeric probabilities of simple events with 9 or fewer outcomes. • Items should be set in a real-world context. • Items may use models such as organized lists, tables, charts, or tree diagrams. • CR items may have students "Show your work or explain your answer." • Graphics should be used in most of these items, as appropriate. • Problem solving situations will include simple probability and recording the results of experiments or simulations